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SPECIFICATION

RELEASABLY ATTACHABLE GRIP

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BACKGROUND

1. Field

The present invention relates to grips for hand railings or other hand support
10 systems. More specifically, the present invention relates to grips which are releasably
adhered to railings or other hand support systems.

2. Prior Art

Hand railings are in use throughout the world to assist in human activity such as
standing, sitting down, ascending and descending a stairway, entering or exiting a
15 moving vehicle, walking, etc. Maintaining a secure, comfortable grip is extremely
important when operating or using various hand-held apparatuses or, more importantly,
simply for safety purposes when grasping any type of railing. Bare railings are used for
hand supports by users, standing, or sitting, or while entering or exiting a vehicle. Bare
railings, whether they are constructed from any type of metal, plastic, wood, glass,
20 concrete or composite material can be slippery, or coarse and inconvenient to hold onto
with bare hands. Furthermore, uncovered railings located in moving vehicles such as
subway train cars, light rail transit cars, transit buses, trams, street cars, trolley cars,
recreational vehicles, etc., are unsafe when the vehicle is in motion and especially when
turning. Typically, such railings are extruded shapes, such as a circular tube or another
25 similar shape made for the human hand to grasp. Additionally, these railings are usually

constructed from durable metal, such as stainless steel, but may also be constructed from wood or various other substances.

Such typical hand railings, however, do not provide a positive gripping surface, which would still further assist in the corresponding human activity associated with the hand railing. Some of the present gripping devices include molded plastic cylindrical grips which are installed and include cross-sectional sections designed to fit the human hand as in U.S. patent 5,584,096 to Auroura, rigid hand railings having a plurality of finger sized indentations, U.S. patent 5,190,267 to Schmitt, et al. and rail covering systems for outdoor decks as in U.S. patent 6,062,519 to Baldassarre. Still other gripping devices include removable foam grips that are wrapped around a bar each time a user wishes to use a bar as in U.S. patent 5,775,756 to Rozenich. This type of grip is typically used for weightlifting equipment. The grips to date involve either railings with built in grips or grips that are, for the most part, permanently attached to the railings, while other grips are not attached at all, rather they are easily removed and transferred from bar to bar.

To date, no grips have been designed which will conform to any railing surface or shape and which are releasably attachable to such railing surface. Hence, there is a need for a grip which will conform to any railing type and which will attach to any railing surface regardless of the type of surface or type of material used as the grip and a grip which is releasably attachable to the railing.

SUMMARY OF THE INVENTION

The present invention is a method, system and device for providing a secure, resilient gripping surface on a railing or other hand support system. The grip of the present invention is designed to provide a secure, resilient gripping surface on any railing or hand support system surface that is grasped by a hand. The grip is preferably utilized on a railing or other hand support system. However, it is readily apparent that the grip could also be used on other structures, such as support poles and beams, etc.

In one aspect of the present invention, a flexible gripping pad is provided which is easily secured to a railing or hand support system by wrapping the grip around the railing or hand support system. The grip may fully cover the railing, or it may be artfully wrapped or it may be partially or fully folded. The grip of this invention will provide a comfortable, resilient gripping surface which will enhance the safety of a railing or hand support system by preventing slipping, hand abrasions or other dangers associated with railings or hand support systems.

In one aspect, the grip of the present invention comprises a skin layer having a top surface and a bottom surface, and a 4-way stretchable material layer having a top surface and a bottom surface. The top surface of the 4-way stretchable material layer is permanently adhered to the bottom surface of the skin layer. The bottom surface of the 4-way stretchable material layer is releasably attached to the railing or hand support system.

The skin layer may be formed from any material which will provide a safe and secure gripping surface. Some examples of possible skin materials include expanded vinyl, which is vinyl with a layer of foam that imparts a soft, textured feel, leather, plastic

sheeting, plastic roll stock, any type of foam product, polyurethane, urethane, woven fabrics, rubber material and foil material. If a vinyl material is used, the vinyl may be supported or unsupported. Similarly, the 4-way stretchable material may comprise any material that can be simultaneously stretched in four directions, such as mylar.

5 In yet another aspect of the present invention, the skin layer of the grip of the present invention has a luminescent quality. The luminescent skin layer glows in the dark to provide additional safety in cases of an emergency.

10 In another embodiment, the grip of the present invention comprises a skin layer having a top surface and a bottom surface, and a backing layer having a top surface and a bottom surface. The top surface of the backing layer is permanently adhered to the bottom surface of the skin layer. Furthermore, the backing layer is permanently attached to a 4-way stretchable material layer with a stretchable top surface and a stretchable bottom surface. The bottom surface of the 4-way stretchable material layer is releasably attached to the railing or hand support system.

15 The grip of the present invention may have tapered edges on its lengthwise sides so that when the grip is spirally wrapped around a railing or other hand support system and the edges overlap, the thickness of the grip remains constant. As an alternative to wrapping the grip such that the edges overlap, the grip may be wrapped so that the edges do not overlap, thus providing additional friction for the user.

20 One method of manufacturing the grip of the present invention comprises providing a skin layer which has a top surface for gripping and a bottom surface to which a permanent adhesive applied. Next, a 4-way stretchable material that has a top surface and a bottom surface is permanently attached to the bottom surface of the skin layer.

Finally, the bottom surface of the 4-way stretchable material is releasably adhered to the railing.

Another method of manufacturing the grip of the present invention comprises providing a skin layer which has a top surface for gripping and a bottom surface to which
5 a permanent adhesive is applied. Next, a backing layer is provided, which has a top surface and a bottom surface. The top surface of the backing layer is adhered to the bottom surface of the skin layer. Next, a 4-way stretchable material layer with a top surface and a bottom surface is permanently attached to the backing layer by adhering the backing layer bottom surface to the 4-way stretchable layer top surface. Finally, the 4-
10 way stretchable material is releasably adhered to the railing.

The system of the present invention is designed for providing a secure, safe, releasably attachable grip on a railing. The system comprises a grip having a 4-way stretchable layer with an inner surface and an outer surface and a skin layer with an inner surface and an outer surface, the inner surface of the skin layer is adhered to the outer
15 surface of the 4-way stretchable layer. The inner surface of the 4-way stretchable layer is releasably adhered to the railing.

Another system of the present invention is also designed for providing a secure, safe, releasably attachable grip on a railing. The system comprises a grip having a backing layer with an inner surface and an outer surface and a skin layer with an inner surface and an outer surface, the inner surface of the skin layer is adhered to the outer
20 surface of the backing layer. The bottom surface of the backing layer is permanently adhered to a 4-way stretchable layer with an inner surface and an outer surface. The inner surface of the 4-way stretchable layer is releasably adhered to the railing.

As set forth above, the grip of the present invention may have tapered edges on its lengthwise sides so that when the grip is wrapped around a railing or other hand support system and the edges overlap, the thickness of the grip remains constant. As an alternative to wrapping the grip such that the edges overlap, the grip may be wrapped so that the edges do not overlap, thus providing additional friction for the user.

One method of placing the grip of the present invention on the railing comprises providing a railing and wrapping the tapered edge grip of the present invention spirally around the railing such that the tapered edges of the grip overlap. The length of the railing may be fully covered by the grip such that the thickness of the grip remains constant or, in the alternative, the edges may not overlap to provide additional friction for the user.

Another method of placing the grip of the present invention on a railing comprises providing a railing having a length and alignment targets in a parallel line along its length. Next, placing the grip so that the center lengthwise axis of the grip is centered on the axis parallel to the length of the railing. The grip of the present invention has alignment targets disposed along an axis parallel to the lengthwise edge of the grip and the grip folds around the railing such that the alignment targets of the grip align with the alignment targets of the railing and the edges of the grip abut when folded around the railing.

The grip of this invention will provide a positive gripping surface for any type of railing using any type of material as a grip and provide a safe, uniform gripping surface for the length of the railing's surface. Moreover, there is a need for a method of manufacturing for grips and a system for providing grips which are releasably adhered to

a railing or hand support system. Finally, there is a need for a method of placing the grip of the present invention on to a railing or other hand support system.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view of an embodiment of the grip.

5 FIG. 2 is perspective view of the grip of FIG.1.

FIG. 3 is a cross-sectional view of the grip if FIG. 2 taken along the line A-A.

FIG. 4 is a side view of another embodiment of the grip.

FIG. 5 is perspective view of the grip of FIG. 4.

FIG. 6 is a cross-sectional view of the grip if FIG. 4 taken along the line A-A.

10 FIGS. 7a-7c show a method or procedure for manufacture of the grip of FIG. 1.

FIGS. 8a-8e show a method or procedure for manufacture of the grip of FIG. 4.

FIG. 9 shows a method of wrapping the grip of FIG. 1.

FIG. 10 shows a method of wrapping the grip of FIG. 4.

FIG. 11 shows a method of spirally wrapping the grip of FIG. 1 or FIG. 4.

DETAILED DESCRIPTION

FIG. 1 discloses grip **100** for use on a railing or hand support system.

Grip **100** has a skin layer **104** and a 4-way stretchable layer **112**. Skin layer **104** has a top surface **102** which provides a comfortable, secure and safe gripping surface. Skin layer **104** can be formed from a variety of materials. Examples of such materials include expanded vinyl, which is vinyl with a layer of foam that imparts a soft, textured feel, leather, plastic sheeting, plastic roll stock, any type of foam product, polyurethane, urethane, woven fabrics, rubber material, foil material or any other material which could

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act as a covering to a hand support system. If skin layer 104 is formed from expanded vinyl, the vinyl surface may be smooth or textured. In addition, if a vinyl material is used, the vinyl may be supported or unsupported. In yet another aspect of the present invention, skin layer 104 of grip 100 of the present invention has a luminescent quality.

- 5 The luminescent skin layer glows in the dark to provide additional safety in cases of an emergency. Any methods known in the art for creating luminescence may be used, for example some of the methods include transfer application processes, wet ink processes and sublimation ink processes.

10 ~~51~~ Skin layer 104 has a bottom surface 106 which is affixed to the top surface 110 of 4-way stretchable material layer 112 by a permanent adhesive 108 that completely covers skin layer 104 from edge to edge. The permanent adhesive 108 can be any permanent adhesive known in the art which will permanently bond skin layer 104 to 4-way stretchable material layer 112. An example of such a permanent adhesive is Flexicon® adhesive V-402. However, it will be clear to one skilled in the art that other similar

15 suitable adhesives may be used.

~~52~~ 4-way stretchable layer 112 has top surface 110 and a bottom surface 114, such that top surface 110 of 4-way stretchable layer 112 conforms to and is permanently affixed to bottom surface 106 of skin layer 104. 4-way stretchable layer 112 may be comprised of any material that can simultaneously stretch in four directions such as

20 mylar. Bottom surface 114 of 4-way stretchable layer 112 is releasably attached to the railing or hand support system by a layer of releasable adhesive 116. Releasable adhesive 116 completely covers from edge to edge and is affixed to 4-way stretchable layer 112 and provides releasable adhesion to the railing or hand support system.

Releasable adhesive 116 provides secure adhesion to the railing or hand support system but may be removed with a minimal amount of effort by peeling grip 100 off the railing or hand support system. An example of a releasable adhesive is Flexicon® V-58.

In one embodiment of grip 100 disclosed in FIG. 3, the lengthwise edges of skin layer 104 and 4-way stretchable layer 112 may be tapered in thickness. FIG. 2 discloses a top view of grip 100. FIG. 3 discloses a cross sectional view of grip 100 taken from cross sectional line A to A of FIG. 2. Tapering the edges of skin layer 104 and 4-way stretchable layer 112 allows for the edges to overlap when wrapping a railing or hand support system and at the same time to maintain a constant thickness of grip 100 despite the overlapping edges. In another embodiment, the edges are tapered but wrapped in such a way that they do not overlap to provide still more friction for the user. In still another embodiment, the lengthwise edges of skin layer 104 and 4-way stretchable layer 112 are not tapered for instances when the edges do not overlap.

FIG. 4 discloses another embodiment of the present invention. Grip 200 has a skin layer 204, a backing layer 212 and a 4-way stretchable layer 220. Skin layer 204 has a top surface 202 which provides a comfortable, secure and safe gripping surface. Skin layer 204 can be formed from a variety of materials. Examples of such materials include, but are not limited to, expanded vinyl, which is vinyl with a layer of foam that imparts a soft, textured feel, leather, plastic sheeting, plastic roll stock, any type of foam product, polyurethane, urethane, woven fabrics, rubber material, foil material or any other material which could act as a covering to a hand support system. If skin layer 204 is formed from expanded vinyl, the vinyl surface may be smooth or textured. In addition, if a vinyl material is used, the vinyl may be supported or unsupported. In yet another aspect

of the present invention, skin layer 204 of grip 200 of the present invention has a luminescent quality. The luminescent skin layer glows in the dark to provide additional safety in cases of an emergency. Any methods known in the art for creating luminescence may be used, for example some of the methods include transfer application processes, wet ink processes and sublimation ink processes.

5 ~~10~~ Skin layer 204 has a bottom surface 206 which is affixed to top surface 210 of backing layer 212 by a permanent adhesive 208 which completely covers bottom surface 214 backing layer 212 from edge to edge. The permanent adhesive 208 can be any permanent adhesive known in the art which will permanently bond skin layer 204 to
10 backing layer 212. An example of such a permanent adhesive is Flexicon® adhesive V-402. However, it will be clear to one skilled in the art that other similar suitable adhesives may be used.

~~15~~ Backing layer 212 has a top surface 210 and a bottom surface 214, such that top surface 210 of backing layer 212 conforms to and is affixed to bottom surface 206 of skin layer 204. Backing layer 212 may be comprised of any material suitable for providing support including open cell foam, closed cell foam, felt, paper or rubber. Bottom surface 214 of backing layer 212 is permanently adhered to the top surface 218 of 4-way stretchable material 220. The permanent adhesive attaching bottom surface 214 of backing layer 212 to top surface 218 of 4-way stretchable material 220 can be any
20 permanent adhesive known in the art which will permanently bond the surfaces an example of which is Flexicon® V-402. 4-way stretchable material 220 has the ability to stretch in all directions simultaneously. An example of a 4-way stretchable material is Mylar. Bottom surface 222 of 4-way stretchable layer 220 is releasably attached to the

railing or hand support system by releasable adhesive 224. Releasable adhesive 224 is
 affixed to and completely covers 4-way stretchable material 220 from edge to edge and
 provides releasable adhesion to the railing or hand support system. Releasable adhesive
 224 provides secure adhesion to the railing or hand support system but may be removed

5 with a minimal amount of effort by peeling grip 200 off the railing or hand support
 system. An example of a releasable adhesive is Flexicon® V-58.

In one embodiment of grip 200 disclosed in FIG. 4, the lengthwise edges of skin
 layer 204, backing layer 212 and 4-way stretchable layer 220 may be tapered in
 thickness. FIG. 5 discloses a top view of grip 200. FIG. 6 discloses a cross sectional
 10 view of grip 200 taken from cross sectional line A to A of FIG. 5. Tapering the edges of
 skin layer 204, backing layer 212 and 4-way stretchable layer 220 allows for the edges to
 overlap when wrapping a railing or hand support system and at the same time to maintain
 a constant thickness of grip 200 despite the overlapping edges. In another embodiment,
 the edges are tapered but wrapped in such a way that they do not overlap to provide still
 15 more friction for the user. In still another embodiment, the lengthwise edges of skin layer
 204, backing layer 212 and 4-way stretchable layer 220 are not tapered for instances
 when the edges do not overlap but a consistent thickness of grip is desired.

FIGS. 7a – 7c disclose a method or procedure for manufacture of grip 100. For
 convenience, the component parts of grip 100 are numbered as in FIG. 1 designating grip
 20 100. The method or procedure for manufacture of grip 100 begins with the act 7a of
 providing a skin layer 104 and applying permanent adhesive 108 to skin layer 104. Skin
 layer 104 can be formed from a variety of materials. Examples of such materials include
 expanded vinyl, which is vinyl with a layer of foam that imparts a soft, textured feel,

leather, plastic sheeting, plastic roll stock, any type of foam product, polyurethane, urethane, woven fabrics, rubber material, foil material or any other material which could act as a covering to a hand support system. If skin layer **104** is formed from expanded vinyl, the vinyl surface may be smooth or rough. In addition, if a vinyl material is used, the vinyl may be supported or unsupported. Next 4-way stretchable material layer **112** is permanently adhered to skin layer **104** as disclosed in FIG. **7b**. As previously set forth, 4-way stretchable layer **112** may be comprised of any material that can simultaneously stretch in four directions such as mylar. Then a releasable adhesive **116** is applied from edge to edge to 4-way stretchable material layer **112**.

In one embodiment of the method of manufacture of grip **100** disclosed in FIG. **3**, the lengthwise edges of skin layer **104** and 4-way stretchable layer **112** may be tapered in thickness. FIG. **2** discloses a top view of grip **100**. FIG. **3** discloses a cross sectional view of grip **100** taken from cross sectional line A to A of FIG. **2**. Tapering the edges of skin layer **104** and 4-way stretchable layer **112** allows for the edges to overlap when wrapping a railing or hand support system and at the same time to maintain a constant thickness of grip **100** despite the overlapping edges. In another embodiment, the edges are tapered but wrapped in such a way that they do not overlap to provide still more friction for the user. In still another embodiment, the lengthwise edges of skin layer **104** and 4-way stretchable layer **112** are not tapered for instances when the edges do not overlap.

FIGS. **8a – 8e** discloses a method or procedure for manufacture of grip **200**. For convenience, the component parts of grip **200** are numbered as in FIG. **4** designating grip **200**. The method or procedure for manufacture of grip **200** begins with the act **8a** of

providing a skin layer **204** and applying permanent adhesive **208** from edge to edge of skin layer **204**. Skin layer **204** can be formed from a variety of materials. Examples of such materials include, but are not limited to, expanded vinyl, which is vinyl with a layer of foam that imparts a soft, textured feel, leather, plastic sheeting, plastic roll stock, any type of foam product, polyurethane, urethane, woven fabrics, rubber material, foil material or any other material which could act as a covering to a hand support system. If skin layer **204** is formed from expanded vinyl, the vinyl surface may be smooth or rough. In addition, if a vinyl material is used, the vinyl may be supported or unsupported. Next backing layer **212** is permanently adhered to skin layer **204** as disclosed in FIG. **8b**. As previously set forth, backing layer **212** may be comprised of any material suitable for providing support including open cell foam, closed cell foam, felt, paper or rubber. Next, as disclosed in FIG. **8c**, permanent adhesive **216** is applied to backing layer **212**. Then, as shown in FIG. **8d**, 4-way stretchable layer **220** is adhered to backing layer **212**. Finally, as disclosed in FIG. **8e**, a releasable adhesive **224** is applied from edge to edge to 4-way stretchable layer **220**.

In one embodiment of the method of manufacture of grip **200** disclosed in FIG. **4**, the lengthwise edges of skin layer **204**, backing layer **212** and 4-way stretchable layer **220** may be tapered in thickness. FIG. **5** discloses a top view of grip **200**. FIG. **6** discloses a cross sectional view of grip **200** taken from cross sectional line A to A of FIG. **5**. Tapering the edges of skin layer **204**, backing layer **212** and 4-way stretchable material layer **220** allows for the edges to overlap when wrapping a railing or hand support system with grip **200** and at the same time to maintain a constant thickness of grip **200** despite the overlapping edges. In another embodiment, the edges are tapered but

wrapped in such a way that they do not overlap to provide still more friction for the user. In still another embodiment, the lengthwise edges of skin layer 204, backing layer 212 and 4-way stretchable layer 220 are not tapered for instances when the edges do not overlap.

FIG. 9 discloses a system of providing a secure, safe, releasably attachable grip on a railing. The system of the present invention can be utilized with any type of railing or hand support system 302. Grip 300 of the present invention has a 4-way stretchable material layer 304 with an inner and outer surface, skin layer 306 which has an inner layer and an out layer, the inner layer of the skin layer 306 is permanently adhered to said outer surface of said 4-way stretchable material layer 304. 4-way stretchable material layer 304 is releasably adhered to railing 302.

FIG. 10 discloses another embodiment of a system of providing a secure, safe, releasably attachable grip on a railing. The system of the present invention can be utilized with any type of railing or hand support system 402. Grip 400 of the present invention has 4-way-stretchable layer 404 with an inner and outer surface, backing layer 406 with an inner and outer surface, and skin layer 408 which has an inner surface and an outer surface, the inner surface of the skin layer 408 is permanently adhered to said outer surface of said backing layer 406. The inner surface of backing layer 406 is permanently adhered to 4-way stretchable layer 404. 4-way stretchable layer 404 is releasably adhered to railing 402.

FIG. 11 discloses a method of enveloping the railing with the grip of the present invention. In one embodiment, grip 500 has alignment targets 506 along axis 510 parallel to lengthwise edge 508 of grip 500. Next, alignment targets 504 are placed on railing

502. Next, grip 500 is placed on the railing so that the center lengthwise axis of the grip is centered on the axis parallel to the length of railing 502. Next, grip 500 alignment targets 506 are aligned with railing 502 alignment targets 504. Finally, grip 500 has a width substantially similar to the circumference of railing 502 such that when grip 500 is

5 folded around railing 502 edges 508 of grip 500 abut.

In another method of wrapping, FIG. 12 discloses a method of spirally wrapping a railing 602 with grip 600. Next, grip 600 is wrapped, placing the tapered edge of grip 600 spirally around the railing such that the tapered edges of grip 600 overlap. The length of railing 602 may be fully covered by grip 600 such that the fully covers railing

10 602 and the thickness of grip 600 remains constant. In an alternative embodiment, grip 600 may be wrapped around the railing so that the edges do not overlap to provide additional friction to the user.